

SPECTRUM®

ETSMIM Management Module Guide

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Preface

Use this guide if you are going to manage an ETSMIM through SPECTRUM. Before reading this manual, you should be familiar with SPECTRUM's functions as described in the Operation documentation and the Administration documentation. You should also be familiar with any network management and hardware requirements described in the ETSMIM Terminal Server documentation.

What is in this Guide

The following chapter descriptions outline the organization of the *ETSMIM Management Module Guide*.

Chapter	Description
Chapter 1 Introduction	Describes the ETSMIM management module and model types.
Chapter 2 Device View	Describes the Device View's representation of an ETSMIM, as well as the views and features available from the Device Menu.
Chapter 3 Configuration Views	Describes the Configuration Views available for the ETSMIM which provide network management information for the device.
Chapter 4 Events and Alarms	Contains a listing and explanation of the event/alarm messages generated in the Event Log or Alarm View for the ETSMIM management module.
Chapter 5 Application View	Describes the Application View for the ETSMIM management module and the major and minor application information provided by the view.

Conventions

In this manual, the following conventions are used:

- Command names are printed in bold; for example, **Clear** or **Save & Close**.
- Menu selections to access a view are printed in bold; for example, **Configuration** or **Detail**.
- Buttons are represented by a shadowed box; for example,

Help

Related SPECTRUM Documentation

When using this guide, you should have a clear understanding of SPECTRUM functionality and navigation techniques as described in the Administration documentation, the Operation documentation, and the following documentation:

SPECTRUM Report Generator User's Guide

Getting Started with SPECTRUM for Operators

Getting Started with SPECTRUM for Administrators

How to Manage Your Network with SPECTRUM

Other Related Documentation

Refer to the following documentation for more information on managing TCP/IP-based networks:

LAN Troubleshooting Handbook, Mark Miller (1989, M&T Publishing, Inc.)

The Simple Book — An Introduction to Management of TCP/IP-based Internets, Marshall T. Rose, Performance Systems International, Inc.

Computer Networks, Andrew S. Tanenbaum, Prentice-Hall, Inc.

Local Area Networks, Architectures and Implementations, James Martin & Kathleen K. Chapman or the Arben Group, Inc. (1989, Prentice-Hall, Inc.)

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Chapter 1

Introduction

What is in this Chapter

This chapter describes the SPECTRUM Management Module for the ETSMIM. It also provides the model type names assigned to the ETSMIM in SPECTRUM. The model type name refers to the template used to specify attributes, actions, and associations for device models in SPECTRUM.

ETSMIM Management Module

The ETSMIM Management Module manages ETSMIM devices using the SNMP network management agent and the Management Information Bases (MIBs), included with the management module.

ETSMIM Applications

The ETSMIM supports common and device-specific applications. These applications are described in the *Bridging Applications Reference*, the *MIB II Applications Reference*, or the *Miscellaneous Applications Reference*, and are as follows:

- MIB-II (SNMP2_Agent)
 - IP (IP2_App)
 - System (System2_App)
 - ICMP (ICMP_App)
 - UDP (UDP2_App)
- Ethernet App
 - Ethernet IF App

RMON and DLM are also supported and SPECTRUM management of these MIBs may be purchased separately. Refer to the documentation provided with the RMON and DLM management modules for descriptions of these capabilities. The following chapters explain how to use SPECTRUM and the management module software to monitor and manage an ETSMIM.



Chapter 2

Device View

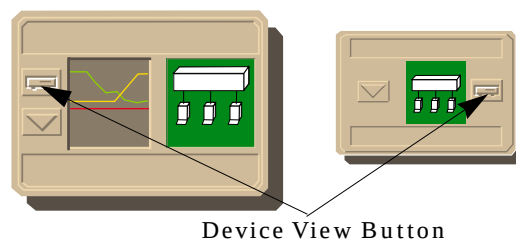
What is in this Chapter

The Device View for the ETSMIM allows you to view the logical representations of the ETSMIM device and ports. The Device View also provides you with menu bar access to views that monitor and control the ETSMIM's performance and its ports.

Accessing the Device View

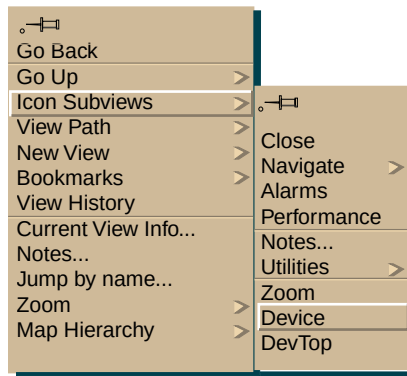
Access the Device view using one of the following methods.

- Double-click on the Device view button of the ETSMIM device icon.



Device View Button

- Highlight the ETSMIM device icon and select Device from the Icon Subviews menu.



Device View

The Device view provides a logical representation of the terminal server's Ethernet and serial interfaces. The interface icons represent each port on the ETSMIM. Figure 2-1 provides an example of an ETSMIM Device view.

Logical Interface Icon

The Logical Interface icon consists of five zones, providing configuration and performance information. Figure 2-2 provides a detailed illustration of the Ethernet Port Logical Interface Icon and the following sections detail each icon zone.

Figure 2-1. Example of an ETSMIM Device View

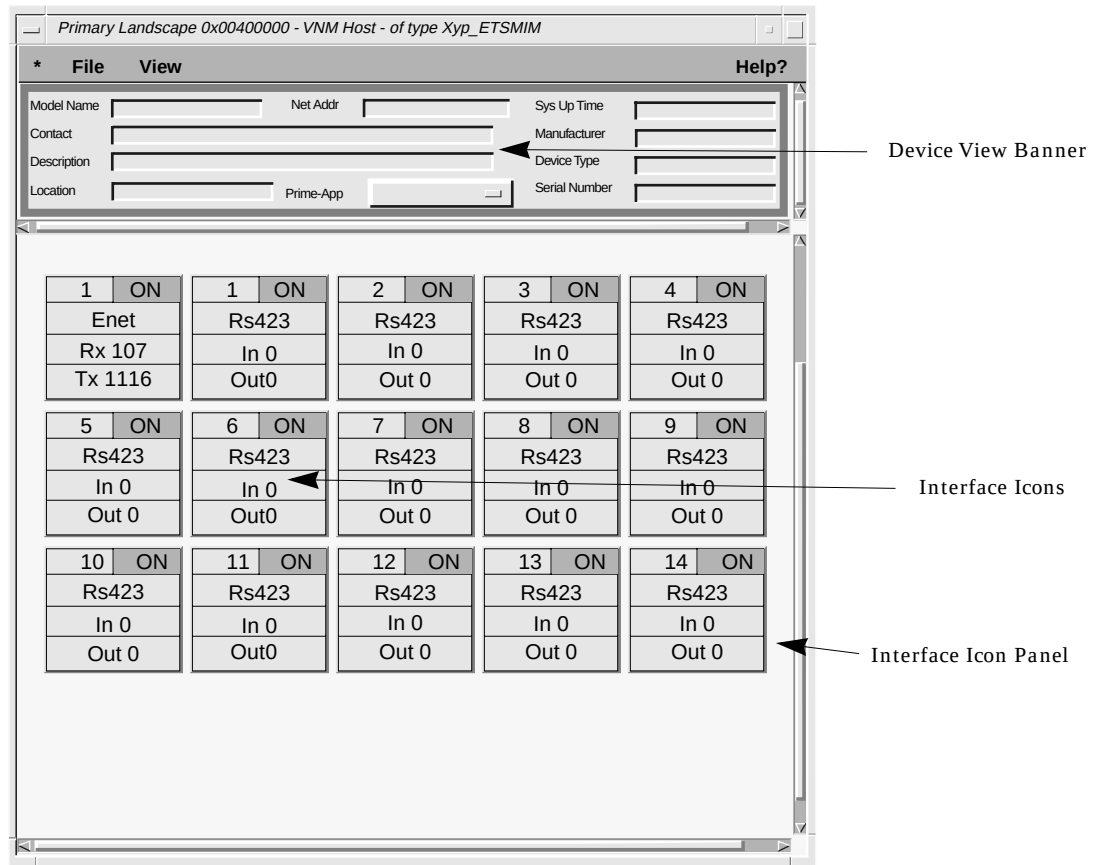
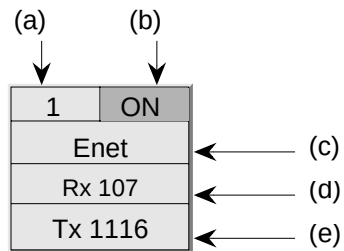


Figure 2-2. Ethernet Logical Interface Icon



- a. Interface Number
- b. Ethernet Configuration view/Interface Status
- c. Ethernet Configuration view/Interface Type
- d. Interface Receive Statistics/Packets Received
- e. Interface Send Statistics/Packets Transmitted

Ethernet Configuration View/Interface Status

The Ethernet Interface Configuration view label displays a textual and background color representation of the current status of the interface. Double-clicking on this label accesses the Interface Status view. Table 2-1 displays interface status options and their respective colors.

Table 2-1. Ethernet Interface Status Label Definitions

Operational Status	Administrative Status	Text Display	Color
ON	ON	ON	Green
OFF	OFF	OFF	Yellow
OFF	ON	OFF	Yellow
TEST	TEST	TEST	Yellow

Ethernet Configuration View/Interface Type

Double-clicking on this label accesses the Ethernet Interface Configuration Detail view.

Ethernet Interface Configuration Detail View

The Ethernet Interface Configuration view provides the following information for the ETSMIM's Ethernet interfaces:

Operational Status

The current operational state of the port (ON, OFF, or TEST).

Administrative Status

This field provides a button that allows you to choose the desired operational state of the port (ON, OFF, or TEST).

Last Status Change

The System UpTime value when the port entered its current operational state.

Physical Address

The Ethernet (MAC) address of the port.

Bandwidth

The estimated bandwidth of the interface measured in bits per second. For interfaces that do not vary in bandwidth or for which no accurate estimate can be made, a nominal bandwidth is provided.

Largest Datagram Supported

The largest Maximum Transmission Unit (MTU), measured in octets, that can be transmitted or received by the port.

Length of Output Packet Queue

The length of the outbound packet queue in packets.

Interface Receive Statistics

The Interface Receive Statistics view is accessed by double-clicking on the Receive Statistics label or by highlighting the Ethernet Logical Interface icon and selecting Receive Statistics from the Icon Subviews menu. The Interface Receive Statistics view provides the following information on incoming port traffic:

Unknown Protocol Packets Received

The number of packets discarded because of an unknown protocol.

Unicast Packets Delivered

The number of unicast packets delivered to a higher level protocol.

NonUnicast Packets Delivered

The number of non-unicast packets delivered to a higher level protocol.

Inbound Packets Discarded

The number of inbound packets discarded even though no errors were detected to make them undeliverable. Such packets may have been discarded to increase buffer space.

Inbound Errors

The number of packets containing errors preventing them from being delivered to a higher level protocol.

In addition, the Interface Receive Statistics view contains a gauge which measures the total number of octets received by the port. An Octets Received button accesses a rate graph displaying the total number of octets received by the port over a given timeframe.

Interface Send Statistics

The Interface Send Statistics view is accessed by double-clicking on the Send Statistics label or by highlighting the Ethernet Logical Interface icon and selecting Send Statistics from the Icon Subviews menu. The Interface Send Statistics view provides the following information on outgoing port traffic:

Outbound Packet Queue

The length of the outbound packet queue in packets.

Unicast Packets Requested

The number of unicast packets that a higher level protocol requested for transmission.

NonUnicast Packets Requested

The number of non-unicast packets that a higher level protocol requested for transmission.

Outbound Packets Discarded

The number of outbound packets discarded even though no errors were detected to prevent them from being transmitted. Such packets may have been discarded to increase buffer space.

Outbound Errors

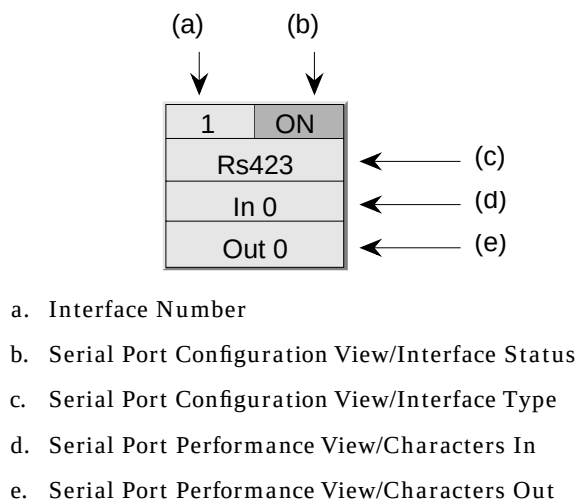
The number of packets containing errors preventing them from being transmitted to a higher level protocol.

In addition, the Interface Send Statistics view contains a gauge which measures the total number of octets transmitted by the port. An Octets Sent button accesses a rate graph displaying the total number of octets transmitted by the port over a given timeframe.

Serial Port Logical Interface Icon

The Serial Port Logical Interface icon consists of five zones, providing configuration and performance information. Figure 2-3 provides a detailed illustration of the Serial Port Logical Interface icon and the following sections detail each icon zone.

Figure 2-3. Serial Port Logical Interface Icon



Serial Port Configuration View/Interface Status

The Serial Port Configuration view label displays a textual and background color representation of the current status of the interface. Double-clicking on this label accesses the Interface Status view. Table 2-2 displays the interface status options and their respective colors.

Table 2-2. Serial Interface Status Label Definitions

Operational Status	Administrative Status	Text Display	Color
ON	ON	ON	Green
OFF	OFF	OFF	Yellow
OFF	ON	OFF	Yellow
MAINTENANCE	MAINTENANCE	TEST	Yellow

Serial Port Configuration View/Interface Type

The Serial Port Configuration Detail view is accessed by double-clicking on the Serial Port Configuration View/Interface Type label or by highlighting the Serial Port Logical Interface icon and selecting Serial Port Configuration from the Icon Subviews menu. The Serial Port Configuration Detail view is described in Chapter 3, *Configuration View*.

Serial Port Performance View

The Serial Port Performance Detail view is accessed by double-clicking on the Serial Port Performance view label (Characters In and Characters Out access the same view) or by highlighting the Serial Port Logical Interface icon and selecting Serial Port Performance from the Icon Subviews menu.



Chapter 3

Configuration View

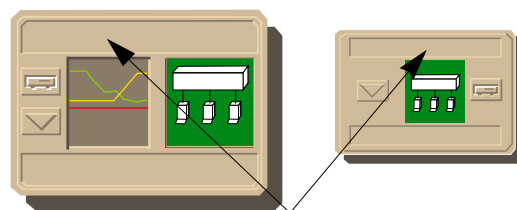
What is in this Chapter

This chapter provides general descriptions of the configuration views that are available for the ETSMIM. These views allow you to access device-specific configuration information.

Accessing the Device Configuration View

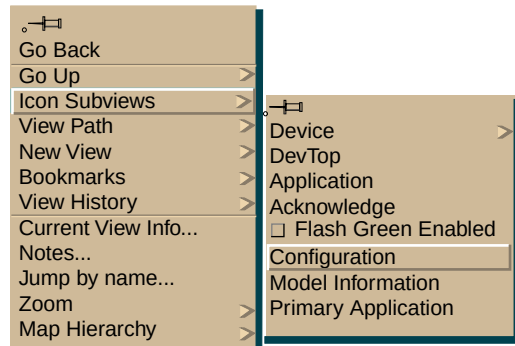
Access the Device Configuration view using one of the following methods:

- Double-click on the Device Configuration view label of the ETSMIM device icon.



Device Configuration View Label

- Highlight the ETSMIM device icon and select Configuration from the Icon Subviews menu.



ETSMIM Device Configuration View

The Device Configuration View provides information on the configuration of the ETSMIM and allows you to modify the values of some fields. This view provides the following information:

Server Ident

A text message identifying the terminal server. You can modify this field.

Server Name

The node name of the terminal server. You can modify this field.

Load File

The software file name to request for down-line load of the terminal server. You can modify this field.

Load Host

The internet address of the terminal server from which to load an image via TFTP (Trivial File Transfer Protocol).

Load Address

The IP address of the host from which the terminal server was last loaded.

Dump Address

The IP address of the node that received the last terminal server memory dump.

Resources

The number of times a local resource allocation failed, for example, due to lack of dynamic memory.

Features

The number of feature entries in the Feature table.

SW Type

The software version variant running in the terminal server.

SW Rev

The software version running in the terminal server. In order, the octets contain major version, minor version, ECO, and pre-release number.

HW Type

The hardware type on which the terminal server is running.

HW Rev

The hardware version on which the terminal server is running.

ROM Rev

The firmware version of the bootstrap ROM installed in the terminal server.

Chassis Type (Mx45xx)

The type of chassis in which the terminal server is running.

Ethernet Interfaces

A unique value for each interface.

Serial Ports

The number of basic character serial ports available.

Resource and Feature Configuration View

You access this view by clicking on the Resource & Feature Detail Button in the ETSMIM Configuration view. This view contains entries in a Resource Utilization panel and a Features panel. To modify the maximum allowed usage, double-click on any entry in the Resource Utilization panel and the Resource Utilization Detail view appears with detailed information for the selected resource. To alter the status of a feature, double-click on any entry in the Features panel and the Feature Detail view appears with the same information in a modifiable format for the selected feature. Fields for both detail views are presented below.

Resource Utilization Detail View

Resource

The percentage of processing time that the terminal server has used (calculated every second).

Current Usage

The number of resources currently in use on the terminal server.

Highest Usage

The current maximum possible number of resources in the terminal server.

Max. Allowed Usage

The maximum possible number of resources in the terminal server. You can modify this value.

Exceeded Supply

The number of times since system initialization that the system could not obtain the resource because none were available.

Feature Detail View

Feature

A list of feature entries.

Status

This field provides a button that allows you to enable or disable the feature for the next system initialization.

Ethernet Interface Configuration View

You access this view by clicking on the Ethernet Interfaces Detail Button in the ETSMIM Configuration view. This view contains entries in an Ethernet Configuration table. Double-click on any entry in the table to access the Ethernet Interface Configuration Detail view for the selected entry with detailed information. Fields for the detail view are presented below.

Ethernet Interface

The interface identified by a particular value. The default is 1.

Description

A description of the interface.

Type

The type of interface.

Ethernet Interface Configuration Detail View

Operational Status

The current operational state of the port as either up, down, or testing. You can modify this field.

Administrative Status

This field provides a button that allows you to set the desired operational state of the port.

Last Status Change

The system uptime that the port entered its current operational state.

Physical Address

The Ethernet (MAC) address of the port.

Bandwidth

The estimated bandwidth of the interface measured in bits per second. For interfaces that do not vary in bandwidth or for which no accurate estimate can be made, a nominal bandwidth is provided.

Largest Datagram Supported

The largest Maximum Transmission Unit (MTU), measured in octets, that can be transmitted or received by the port.

Length of Output Packet Queue

The length of the outbound packet queue in packets.

Serial Port Configuration View

You can access this view by clicking on the Serial Ports Detail Button in the ETSMIM Configuration view. This view contains entries in a Serial Port Configuration table. Double-click on any entry in the table to access the Serial Port Configuration Detail view for the selected entry with more detailed information in a modifiable format.

Serial Ports

The number of ports the device supports (defaults to 16).

Serial Port Configuration Table

This table includes the following fields described below: Type, Speed, Bits, Stopbits, Parity, In Flow Control, and Out Flow Control. Double-clicking on any entry accesses the Serial Port Configuration Detail View for that entry. Fields for the detail view are presented below.

Serial Port Configuration Detail View

Port

A value uniquely identifying a port.

Port Name

Refers to an alphanumeric identifier for a port. You can modify this field.

Port Type

The type of terminal attached to the port for formatting local output.

Input Speed

The port's input speed in bits per second. You can modify this field.

Output Speed

The port's output speed in bits per second. You can modify this field.

Autobaud

This field provides a button that allows you to enable or disable the port's ability to automatically sense input speed.

Parity

This field provides a button that allows you to choose the port's sense of a character parity bit as either none, odd, even, mark, or space.

Bits

The number of bits in a character. The default is 8. You can modify this field.

Stop Bits

This field provides a button that allows you to choose the number of stop bits. The choices are 1.0, 2.0, 1.5, or dynamic.

Input Signals

The number of input signals for the port in the input signal table. The table contains entries only for those signals the software can detect.

Output Signals

The number of output signals for the port in the output signal table. The table contains entries only for those signals the software can verify.

Admin Status

This field provides a button that allows you to choose the desired port state, independent of flow control. On indicates that the port is allowed to pass characters and form new sessions. Disabled indicates that the port is allowed to pass characters but not form new sessions. Off indicates that the port is not allowed to pass characters or have any sessions. Maintenance indicates a maintenance mode, exclusive of normal operation (e.g., running a test).

Opr Status

The port's actual operational state, independent of flow control. On indicates that the port is able to function normally. Off indicates the port's inability to function for administrative or operational reasons. Maintenance indicates a maintenance mode, exclusive of normal operation (e.g., running a test). Absent

indicates that port hardware is not present. Active indicates that the port is on with a user present (e.g., logged in).

Input FlowCtrl

This field provides a button that allows you to choose the type of input flow control. The choices for data flow control are described in Table 3-1.

Table 3-1. Input and Output Flow Control Choice Descriptions

Flow Control	Description
XonXoff	Software flow control by recognizing Xon and Xoff characters.
Hardware	Flow control delegated to the lower level (i.e., a parallel port).
CtsRts	Clear to Send and Request to Send. Specific to RS-232-like ports.
DtsDtr	Data Terminal Send and Data Terminal Ready. Specific to RS-232-like ports.
None	No flow control at this level or below.

Output FlowCtrl

This field provides a button that allows you to choose the type of output flow control. Refer to Table 3-1 for the descriptions of data flow control options.

Reset

This field provides a button that allows you to execute a reset of the port into a clean, initial state, for both hardware and software, disconnecting all of the port's existing sessions.

Admin Origin

This field provides a button that allows you to choose the administrative origin of the port to device connection. Dynamic indicates that the port is accessible from either the local command mode, or remotely by service name or port number. Local indicates that the port is accessible only from the local command mode. Remote indicates that the port is accessible remotely by service name or port number. None indicates that the port is not accessible and the server prevents any use of the port.

Maximum Sessions

The maximum number of sessions. The default is 4. You can modify this field.

Current Sessions

The number of sessions currently open.

Basic Configuration

Clicking on this button accesses the Basic Port Configuration view.

Extended Configuration

Clicking on this button accesses the Extended Port Configuration view.

Basic Port Configuration View

Port

A value that uniquely identifies the port.

Port Status

The current operational status of the port.

Active Username

The user name currently logged into the port.

Last Character Input

The most recent character received into the port.

Last Character Output

The most recent character transmitted from the port.

Local Accesses

The number of times a user has logged on to the port, since the counter was reset to zero.

Idle Timeouts

The number of times that the terminal server has disconnected a session initiated by the remote connection queue for being inactive, since the counter was reset to zero.

Port Remote Sessions

The number of remote sessions to the port since terminal server initialization.

Zero Port Counters

This field provides a button that allows you to zero counters for the port. Selecting execute causes the port's counters to be zeroed, selecting ready has no effect.

Default Username

The default user name for automatically logging into the port. You can modify this field.

Default Protocol

This field provides a button that allows you to choose which protocol to use with Default Name. The choices are LAT (Local Access Terminal), telnet, or any.

Default Action

This field provides a button that allows you to choose the action to take relative to Default Name. The choices are Preferred (preferred service) or Dedicated (port dedicated).

Default LAT Port Name

A LAT port name to use with Default Name may be entered.

Default LAT Node Name

A LAT node name to use with Default Name may be entered.

Default Name

The default user name for automatically logging into the port may be entered.

Port Autologin

This field provides a button that allows you to enable or disable automatic port login.

Port Autoconnect

This field provides a button that allows you to enable or disable automatic session connection.

Port Connectresume

This field provides a button that allows you to control connection attempts to a destination where the port already has a connection. When enabled, the existing connection becomes the active connection. When disabled, a new connection will be created.

Port Multisessions

This field provides a button that allows you to enable or disable the multisection line protocol between the port and the locally-connected terminal.

Port Broadcast

This field provides a button that allows you to enable or disable broadcast messages from this port to other local ports.

Port Dialup

This field provides a button that allows you to enable or disable connection to a dialup line.

Port Default Session Mode

This field provides a button that allows you to choose the data recognition mode used when starting a session. Table 3-2 describes the choices.

Table 3-2. Port Default Session Mode Choice Definitions

Mode	Definition
Interactive	Locally recognizes all controls.
Binary	Recognizes only session protocol.
XonXoff	Recognizes only Xon and Xoff.
Transparent	Recognizes no data.

Port Message Codes

This field provides a button that allows you to enable or disable the inclusion of error numbers in the error messages displayed on the port.

Port Verification

This field provides a button that allows you to enable or disable the display of informational messages on the port when the user connects, disconnects, or switches a session.

Port Loss Notification

This field provides a button that allows you to enable the sending of a Bell character to the port when it loses an input character due to an overrun or data error.

Port Inactivity Logout

This field provides a button that allows you to enable or disable an automatic port logout if activity has not occurred within the specified idle timeout period.

Port Queuing

This field provides a button that allows you to enable or disable the queueing of requests for using the port.

Port Idle Timeout

You may enter the time in minutes a session may have no activity before it is automatically disconnected. A value of -1 indicates no timeout. Zero is not valid.

Extended Port Configuration View

All of the following fields, except for Port, are modifiable:

Port

A value uniquely identifying the port.

Terminal Type

The type of terminal attached to the port for formatting local output. The options are ANSI, Hardcopy, or Softcopy.

Prompt

The prompt for the system to use on the port.

Backwards Switch

The character input from the character port to cause a switch to the previous, lower numbered session.

Forwards Switch

The character input from the character port to cause a switch to the next, higher numbered session.

DCD Timeout

The time, in milliseconds, that DCD (data carrier detect) may be asserted before disconnecting the port.

Typeahead Size

The maximum number of input characters to hold pending transmission on a session.

Line Editor

This field provides a button that allows you to enable or disable the user from using local mode command line editing.

Begin Line Character

Character input from the character port to move the cursor to the beginning of the line.

End of Line Character

Character input from the character port to move the cursor to the end of the line.

Cancel Character

Character input from the character port to cancel an interactive dialog or delete the current line.

Quoting Character

Character input from the character port to inhibit interpretation of the next input character.

Forwards Character

Character input from the character port to move the cursor to the right.

Del Begin Character

Character input from the character port to delete the current line from the cursor to the beginning.

Previous Line Character

Character input from the character port to recall the previous, older line in the command history.

Next Line Character

Character input from the character port to recall the next, newer line in the command history.

Resolve Service

This field provides a button that allows you to choose the session protocol to use when not otherwise specified: LAT, Telnet, or Any.

DTR Wait

This field provides a button that allows you to determine when the system sends a DTR (data terminal ready) signal on the port. DTR can be configured so that a notification is made: at all times (Always), when a connection or a ring has been established (ConnectOrRing), when a connection has been established (ConnectOnly), or when a ring has been established (RingOnly).

DSR Logout

This field provides a button that allows you to enable or disable logging out the port when DCD (data carrier detect) is no longer in effect.

Signal Check

This field provides a button that allows you to enable or disable observing DSR (data set ready) and DCD (data carrier detect) to bound allowing sessions.

Interrupts

This field provides a button that allows you to permit recognition of the BREAK or local switch key to interrupt a session.

Modem Control

This field provides a button that allows you to enable or disable the observation of hardware modem control signals.

Pause

This field provides a button that allows you to pause local-output to the port after each screenfull.

Break

This field provides a button that allows you to choose the action taken on a BREAK condition from the port. The options are Ignore, suspend the current session and switch to a local command prompt (LocalSwitch), or notify a remote device (SendRemote).

Internet Connections

This field provides a button that allows you to enable outgoing connection by internet address. When disabled, connections are requested by domain name.

Window Size

You may enter the size of the TCP window for TCP connections on the port.

Dialback

This field provides a button that allows you to enable or disable the use of dialback when a user logs in on the port. The dialback feature is used in conjunction with a script server that runs a script to reset the line and dial a stored phone number.

Dialback Timeout

The time, in seconds, to wait for remote modem response when dialing back.

Xyplex Server Configuration View

Access this view by clicking on the Server Button in the ETSMIM Configuration view.

Server Date

The system's current local date and time.

Server Timezone

The adjustment to apply to a universal (Greenwich) time received when down-line loaded. The adjustment is represented by two octets; the first octet is the number of hours west of universal, the second is the number of minutes.

Server Welcome

The text string the server displays before attempting to log in a user.

Server Login Prompt

The text string the server displays to prompt a user for the login password.

Sessions Limit

The maximum number of service nodes to keep in the node table.

Inactivity Timer

The amount of time, in minutes, that a port can remain logged in to the server and have no connected sessions before the port is logged off.

Rotary Table Entries

The parameter values for a rotary. A rotary refers to the assignment of the same internet address or domain name to multiple destinations that offer the same type of service.

Detail

Click on this button to access to the Rotary Table View described later in this section.

Primary Gateway Addr

The internet address of the system's primary (first choice) gateway. A value of 0.0.0.0 indicates no address.

Secondary Gateway Addr

The internet address of the system's secondary (second choice) gateway. A value of 0.0.0.0 indicates no address.

Subnet Mask Autoconfigure

This field provides a button that allows you to enable automatic determination of the internet subnet mask by the server. If disabled, an internet subnet mask specified by the server manager is used.

Fragment Reassembly

This field provides a button that allows you to enable the reassembly of IP fragments.

Server Broadcast

This field provides a button that allows you to enable the server to broadcast its IP address used in internet broadcast messages.

Server Change

This field provides a button that allows you to choose the system's operation with regard to DEFINE commands. The two options are permOnly, which indicates that commands modify only the permanent database, and OperAndPerm which indicates that commands modify both operational and permanent databases.

Server Dump

This field provides a button that allows you to enable the dumping of the system's memory when the system crashes.

Server Report Errors

This field provides a button that allows you to enable the server to display an error when the user gives an unsupported command.

Server Console Logout

This field provides a button that allows you to enable automatic disconnection of a session when a console port user logs out.

Active Users

The number of ports that have interactive sessions connected.

High

The highest value of active users since system initialization.

Active Ports

The number of ports that have interactive sessions or remote-access connections.

High

The highest value of active ports since system initialization.

Connected Sessions

The total number of sessions which the server has connected.

High

The highest value of sessions since system initialization.

Zero All

This field provides a button that allows you to zero counters for the system. Selecting execute causes all of the system's counters to be zeroed, selecting ready has no effect.

Last

The time, in seconds, when all of the counters were last set to zero.

Zero Base

This field provides a button that allows you to zero all the system's base counters. Selecting execute causes all of the system's base counters to be zeroed, selecting ready has no effect. The SNMP counter is an example of a

counter that may be zeroed. Examples of counters not zeroed are Ethernet interface counters or port counters.

Initialize

This field provides a button that allows you to choose how the system resets its software to initial load values, usually by reloading. If conditional execution is selected, the initialization takes place only if the overall system state is acceptable (e.g., when there is no need to store permanent parameters). If unconditional execution is selected, the initialization takes place regardless of the overall system state. Cancel aborts an initialization that has not yet started.

Delay

The number of minutes to delay before beginning the system initialization process. The default value is 1.

Crash

This field provides a button that allows you to reboot.

Parameter Server

Click on this button for access to the Parameter Server Configuration view.

SNMP Parameters

Click on this button for access to the SNMP Parameters view.

DNS Parameters

Click on this button for access to the Domain Name Server Parameters view.

Queue Parameters

Click on this button to access the Queue Parameters view.

Rotary Table View

This window displays the rotary table. Double-click on any entry within the table to access the Rotary Detail view for that entry. The detail view provides more detailed information than the Rotary Table view. These fields are described below.

Rotary Detail View

Status

The status of this entry. Setting the value to Invalid invalidates the entry.

Address

The internet address to be recognized as a rotary address.

Port Map

The list of character ports that compose the rotary. The value for this field contains a bitmap, with one bit for each port, and enough octets for all the ports on the system.

Parameter Server Configuration View

Loaded From

The name of the system that most recently provided the terminal server's stored parameters.

MAC Address

The Ethernet address contained in the Client Loader Address.

Version Last Loaded

The network address of the system that most recently provided the system's stored parameters.

Known Parameter Servers

The number of parameter servers known to this system, indicating the number of entries in the server table.

Max

The maximum number of attempts by this system to store new parameters with a server that has not acknowledged previous attempts. You can modify this field.

Perform Immediate Search

Selecting execute with this button causes this system to immediately check for additional parameter servers. Selecting Ready has no effect.

Periodic Search

This field provides a button that allows you to enable or disable the periodic search for additional parameter servers.

Search Interval

The number of minutes between checks for additional parameter servers. You can modify this field.

Retransmit Timer

The number of minutes between the system's attempts to store new parameters with a server that has not acknowledged previous attempts. You can modify this field.

Retransmit Limit

The maximum number of times the server will attempt to retransmit a message that has not been acknowledged by a service node. You can modify this field.

Bad Parameter Messages

The number of invalid parameter service protocol messages received by the system.

Rejected Servers

The number of parameter servers the system rejected due to exceeding the client server limit.

SNMP Parameters View

This window displays three tables: Get Client Detail Table, Set Client Table, and Trap Client Table. Double-click on any entry within a table and the detail view for that entry appears. The detail views include the same information as that presented in the tables in a modifiable format. These fields are described below.

Get PDU Community String

The SNMP community name allowed to perform get-requests or get-next requests. You can modify this field.

Set PDU Community String

The SNMP community name allowed to perform set-requests. You can modify this field.

Trap PDU Community String

The SNMP community name sent in traps from this agent. You can modify this field.

Get Client Detail View

Entry

The parameter values for a get client.

Entry Status

This field provides a button that allows you to choose the status of this entry. Possible choices are Invalid or Valid.

IP Address

The client's network address. You can modify this field.

Set Client Detail View

Entry

Provides a list of set client entries.

Entry Status

This field provides a button that allows you to choose the status of this entry. Possible choices are Invalid or Valid.

IP Address

The client's network address. You can modify this field.

Trap Client Detail View

Entry

The parameter values for a trap client.

Entry Status

This field provides a button that allows you to choose the status of this entry. Possible choices are Invalid or Valid.

IP Address

The client's network address. You can modify this field.

Domain Name Service Parameters View

This window includes the Name Cache Panel as well as the information below. Double-click on any entry within the table to access the detail view for that entry. The detail view allows you to modify some of the information presented in the table. Following are the field descriptions:

Domain Name Suffix

The domain name for the terminal server on the network.

Secondary Domain Address

The IP address at which a domain name server is located. The terminal server can use up to two domain name servers - primary and secondary.

Primary Domain Address

The IP address at which a domain name server is located. The terminal server can use up to two domain name servers - primary and secondary.

Domain TTL

The number of hours that a domain name will be retained by the server.

Name Cache Entries

The number of entries in the name cache table.

Name Cache Detail View

Status

This field provides a button that allows you to choose the status of the entry. When set to Invalid, the entry is removed from the table.

Domain Name

A fully qualified domain name.

IP Address

The internet address corresponding to the domain name.

Source

Defines the creator of the entry. Possible sources are defined in Table 3-3.

Table 3-3. Source Definitions

Source	Definition
Local	Defined by manager.
Primary	Obtained from primary name server.
Secondary	Obtained from secondary name server.

TTL

The number of minutes remaining in the entry's Time-to-Live.

Queue Parameters View

This window displays the Queue Table as well as the information below. Double-click on any entry within the table to access the detail view for that entry. The detail view includes more detailed information than the table and allows some modification. Following are the field descriptions:

Queue Limit

The maximum number of entries that can be made in the Queue table. You can modify this field.

Queue Entries

The number of connection requests queued in the server connection queue.

High

The greatest number of entries in the Queue table since system initialization.

Queue Entry Detail View

Entry

The job number of a queued request.

Status

This field provides a button that allows you to choose the status of a queue entry. To remove an entry set to invalid.

SourceNode

The name of the system that originated the queue entry.

Service

The name of the service for which the originator is waiting.

Port

The number of the port for which the originator is waiting, if supplied by the originator.

Port Name

The name of the port for which the originator is waiting, if supplied by the originator.

ETSMIM Security Configuration View

Server Login Password

The password a user must enter to be given the opportunity to log in. You can modify this field.

Server Privileged Password

The password a user must enter to become a privileged user. You can modify this field.

Server Maintenance Password

The password a management system must supply to force the system to reboot or use the system's remote console using the Maintenance Operation Protocol (MOP). When setting this value, fill with zeros from the first octet. That is, the value '1ab42' is expressed as '0.0.0.0.1.ab.42'. A value of zero disables the password check. You can modify this field.

Server Lock

This field provides a button that allows you to enable or disable the server lock.

Server Password Limit

The maximum number of service nodes the server can retain information about. You can modify this field.

Maximum Number of Entries

The number of times the server allows a user to retry an incorrect password.

Internet Security Entries

The number of valid security entries in the system's port security table.

Port Security Table

Select this button to view the Port Security Table view.

Kerberos

Select this button to view the Kerberos Parameters view.

Script Servers

Select this button to view the Script Server Configuration view.

Internet Security Table

Select this button to view the Internet Security Configuration view.

Port Security Table View

This window displays the Port Security Table. Double-click on any entry within the table to access the detail view for that entry. The detail view includes more detailed information than the panel in a modifiable format. Following are the field descriptions:

Port Security Detail View

Port

A value that uniquely identifies the port.

Inbound Access

This field provides a button that enables you to allow or deny access to the port of incoming TCP connections.

Outbound Access

This field provides a button that enables you to allow or deny access to the port of outgoing TCP connections.

Password

This field provides a button that allows you to enable or disable the requirement for a login password to log in on the port.

Limited Commands

This field provides a button that allows you to enable or disable the commands available to the user on the port.

Limited View

This field provides a button that allows you to enable or disable what a user may display.

Kerberos Status

This field provides a button that allows you to set the level of Kerberos operation on the system as either none or login.

Port Login Script Detail View

This view is available from the Port Security Table by double-clicking on the desired entry in the Log Script column.

Port

A value that uniquely identifies the port.

Login Script

This field provides a button that allows you to enable, disable, or require the script action taken when a user logs in on the port.

Loader Address

The network address of the server that provided the script for the current port login.

Script Filename

The path and file name of the script used for the current port login.

Script Echo

This field provides a button that allows you to enable or disable the display of script operation on the port when running a script.

Kerberos Parameters View

Kerberos

This field provides a button that allows you to require the entry of a login or Kerberos password for the use of the port.

Realm

The Kerberos realm with which the Server Name 1 and Server Name 2 are associated. You can modify this field.

Query Limit

The maximum number of attempts the system can make when trying to verify a Kerberos ID. You can modify this field.

Master

The domain name of the Kerberos master host system, which holds the Kerberos database. You can modify this field.

Primary Server

The domain name of the first Kerberos server to try when the system verifies a Kerberos ID. You can modify this field.

Secondary Server

The domain name of the Kerberos server to try when the system verifies a Kerberos ID and cannot reach the Kerberos primary server. You can modify this field.

Logins without Kerberos

The number of user logins on ports for which Kerberos user verification is not enabled.

Successful Kerberos Logins

The number of successful user logins on ports for which Kerberos user verification is permitted.

Unsuccessful Kerberos Logins

The number of verification failures due to an incorrect ID or password for attempted user logins on ports for which Kerberos user verification is allowed.

Password Change Failures

The number of user failures to change their Kerberos password due to an invalid old password or new password verification.

Master Access Successes

The number of times the system successfully accessed the Kerberos master host.

Master Access Failures

The number of times the system failed to access the Kerberos master host.

Primary Access Successes

The number of times the system successfully accessed the Kerberos primary server.

Primary Access Failures

The number of times the system failed to access the Kerberos primary server.

Secondary Access Successes

The number of times the system successfully accessed the Kerberos secondary server.

Secondary Access Failures

The number of times the system failed to access the Kerberos secondary server.

Last Kerberos Error

The error number of the most recent Kerberos-related failure.

Script Server Configuration View

This window displays the Script Servers Panel. Double-click on any entry within the panel to access the detail view for that entry. The detail view includes more detailed information than the table in a modifiable format. Following are the field descriptions:

Script Server Detail View

Server Name

The name of a network login server, suitable for resolution to a network address.

Server Path

The full path name to the script file that is identified by the user name.

Entry Status

This field provides a button that allows you to choose the status of this entry. When set to Invalid, the entry is deleted.

Internet Security Configuration View

This window displays the Internet Port Security Panel. Double-click on any entry within the panel to access the detail view for that entry. The detail view includes the fields appearing in the panel in a modifiable format. Following are the field descriptions:

Internet Security Detail View

Entry

The numeric identifier for port security entries.

Status

This field provides a button that allows you to choose the status of this entry. Options are Valid or Invalid.

Address

The IP address of the entry.

SubMask

The mask applied to the entry's address when making a security check based on an entry.

Access

The access to the port for TCP connections when making a security check based on this entry.

Direction

The direction of TCP connections of this entry.

Telnet Configuration View

This window displays the Telnet Configuration Table. Double-click on any entry within the table to access the detail view for that entry. The detail view includes the information appearing in the table in a modifiable format.

Following are the field descriptions:

Telnet Port Detail View

Telnet Port

An index value that uniquely identifies a port.

Terminal Type

The type of terminal character string used for Telnet Negotiations. You can modify this field.

Binary Session Mode

This field provides a button that allows you to control the operation of the Telnet binary mode. The choices are FlowControl, Complete, or Disabled. Bit sequences are used to temporarily start or stop a bit stream (i.e., flow control). For these bit sequences to work, the sender and the receiver must agree on what the bit sequences are and search the bit stream for those control sequences. The Binary Session Mode turns on/off the searches for flow control characters when the telnet session is in binary mode. Disabled indicates that binary mode negotiation is to be refused. Flow Control indicates that all characters except XON and XOFF are allowed through. Complete indicates that all characters are allowed through.

Transmit Mode

This field provides a button that allows you to choose Buffered, Immediate or Timed mode for sending to the remote partner those characters that are received from the character port. Immediate transmit mode indicates that the server will send each character as soon as possible after it is typed at the keyboard. Buffered transmit mode indicates that the server will not transmit characters typed at the keyboard until a control character is typed at the keyboard. Timed transmit mode indicates that the server will wait until the user-defined maximum amount of time, specified as a number of characters, before transmitting data.

CSI Escape

This field provides a button that allows you to enable or disable the translation of 8-bit escape sequences received from the character port to 7-bit equivalents before transmission to the remote partner.

EOR Reflection

This field provides a button that allows you to enable or disable the end of record reflection. When enabled, an end of record (EOR) is required prior to binary negotiation when establishing a Tn3270 session.

Echo Mode

This field provides a button that allows you to choose which connection partner in a Telnet session will echo (return to the video display or printer) characters the user has typed at the keyboard. Local is for characters that are echoed by the terminal server and remote is for characters that are echoed by the connection partner.

Newline

This field provides a button that allows you to choose the translation applied to a newline received from the character port, before sending the newline request to the remote partner. Carriage Return and a Null Character (CrNull) transmit those two characters to a telnet host when the return key is used. Carriage Return and Linefeed (CrLf) transmit those two characters to a telnet host when the return key is used. Verbatim refuses translation.

Newline Filtering

This field provides a button that allows you to choose the translation applied to newline sequences received from the network, before sending the newline to the character port (i.e., the information is coming from the ETSMIM side of the connection and going out over the serial port). Carriage Return (Cr) translates telnet newline sequences to a carriage return. Carriage Return and a Null Character (CrNull) transmits those two characters to a telnet host when the return key is used. Carriage Return and Linefeed (CrLf) transmits those two characters to a telnet host when the return key is used. None does not translate telnet newline sequences.

Option Display

This field provides a button that allows you to enable or disable the display of the Telnet option negotiations.

Default Port

The default telnet-port-number, which can be a protocol or physical port number.

Remote Port

The telnet-port-number for which the terminal server will accept a remote connection. This is similar to a logical address at which this physical port can be reached. You can modify this field.

Query Character

The character that causes the terminal server to provide a visible indication that the system is still up and running when typed in a Telnet session. Should the Query Character be undefined, there will be no indication. You can modify this field.

Erase Line Character

The character that causes the terminal server to erase the previous inputted line when typed in a Telnet session. You can modify this field.

Abort Output Character

The character that causes the terminal server to terminate further display of output to the terminal server when typed in a Telnet session. Should the Abort Output Character be undefined, termination of the display will not occur. You can modify this field.

Interrupt Character

The character that causes the terminal server to suspend, interrupt, abort, or terminate a user process when typed in a Telnet session. You can modify this field.

Transmit Idle Time

The number of character times to wait before transmitting. You can modify this field.

Erase Keystroke Character

The character that causes the terminal server to erase the previously inputted character when typed in from a Telnet session. You can modify this field.

Attention Character

The character that causes the host to return to the operating system prompt when typed in a Telnet session. You can modify this field.

Synchronize Character

The character that causes the host to try and synchronize with the remote partner when typed in from a Telnet session. You can modify this field.

LAT Configuration View

Number

An arbitrary number assigned and used for administrative purposes. You can modify this field.

Announcements

This field provides a button that allows you to enable or disable an automatic, periodic announcement of local services to the network.

Purge Node

This field provides a button that allows you to enable the automatic deletion of all reachable node table entries when the number of entries exceeds the Node Limit.

Purge Group

This field provides a button that allows you to enable the automatic deletion of all node table entries when the service group or port groups are changed.

Node Limit

The maximum number of service nodes to keep in the node table. You can modify this field.

Retransmit Limit

The maximum number of times to retransmit an unacknowledged message. You can modify this field.

Identification Size

The maximum number of characters to store in the instances of visible service identification.

Circuit Timer

The number of milliseconds to collect port input data before sending it to the host.

Keepalive Timer

The time, in seconds, that the server will wait before it transmits a null message on an active virtual circuit to service nodes. This notifies the nodes that the server is still available on the network. You can modify this field.

Multicast Timer

The number of seconds between transmission of local service announcements. You can modify this field.

Service Groups

The list of group numbers allowed to use local services, where a group number is in the range of 0-255. You can modify this field.

Message Received

The number of LAT messages received.

Messages Transmitted

The number of LAT messages sent.

Solicitations Accepted

The number of incoming LAT session connection attempts accepted.

Illegal Messages Rcv'd

The number of LAT messages received with an invalid format.

Illegal Slots Rcv'd

The number of LAT messages received with an invalid slot format.

Illegal Multicasts Rcv'd

The number of multicast LAT messages received with an invalid format.

Duplicates Received

The number of duplicate LAT messages received.

Messages Re-transmitted

The number of LAT messages retransmitted due to no acknowledgement.

Discarded Nodes

The number of nodes that could not be included in the server node database because the value set for the Server Node Limit characteristic has been reached or because of insufficient memory.

Multiple Node Addresses

The number of times a service announcement contained a node name already in the visible service table but with different addresses.

Solicitations Rejected

The number of incoming LAT session connection attempts rejected.

LAT Ports

Select this button to access the LAT Port Table view.

LAT Nodes

Select this button to access the LAT Node Table view.

LAT Services

Select this button to access the LAT Services Table view.

LAT Port Table View

This window displays the LAT Port Table. Double-click on any entry within the table to access the detail view for that entry. The detail view includes more detailed information than that appearing in the table in a modifiable format. Following are the field descriptions:

LAT Port Detail View

LAT Port

An index value that uniquely identifies a port.

Auto Prompt

This field provides a button that allows you to enable or disable the automatic stimulation of a host prompt when forming a new session.

Remote Modification

This field provides a button that allows you to enable or disable the remote system to modify certain physical port characteristics.

Current Groups

The list of group numbers to which the port currently has set access, where a group number is in the range of 0-255.

Authorized Groups

The list of group numbers to which the port is allowed to set access, where a group number is in the range of 0-255.

LAT Node Table View

This window displays the LAT Node Table. Double-click on any entry within the table to access the detail view for that entry. The detail view includes more detailed information than that appearing in the table, with some fields modifiable. Following are the field descriptions:

LAT Node Detail View

Node

The name of the node.

Identification

A textual description identifying the node.

Address

The Ethernet address of the node.

Status

The communication status of the node.

Data Link Frame Size

The maximum Ethernet frame used by the node.

Services

The number of entries for the node in the node service table.

Node Groups

The list of groups numbers to which the node belongs, where a group number is in the range of 0-255.

Messages Received

The number of LAT messages received from the node.

Slots Received

The number of LAT slots received from the node.

Bytes Received

The total number of bytes received from the node, including Ethernet overhead.

Duplicates Received

The number of duplicate LAT messages received from the node.

Illegal Slots Received

The number of LAT slots received from the node with an invalid format.

Solicitations Rejected

The number of LAT session connection attempts received from the node and rejected.

Solicitations Accepted

The number of LAT session connection attempts received from the node and accepted.

Connected Sessions

The number of connected sessions to the node.

Multiple Node Address

The number of times a LAT message multicast by the node had a different Ethernet address from the previous time.

Messages Transmitted

The number of LAT messages sent to the node.

Slots Transmitted

The number of LAT slots sent to the node.

Bytes Transmitted

The total number of bytes sent to the node, including Ethernet overhead.

Illegal Messages Received

The number of LAT messages received from the node with an invalid format.

Messages Re-transmitted

The number of LAT messages retransmitted to the node due to the lack of acknowledgment.

Zero Counters

This field provides a button that allows you to zero counters kept for the node. Selecting execute causes all the system's counters for that node to be zeroed out. Selecting ready has no effect.

Seconds Since Last Zeroed

The time, in hundredths of a second, since the most recent zeroing of the counters for the node. Nodes can be zeroed through execution of Zero All or Node Zero.

LAT Services View

This window displays the Offered Services panel and the Visible Services panel. Double-click on any entry within a panel to access the detail view for that entry. The detail view includes more detailed information than that appearing in the panel, with some fields modifiable. Following are the field descriptions:

LAT Offered Services Detail View

Service Name

The name of an offered service.

Identification

The text that is used to identify a service.

Status

This field provides a button that allows you to choose the status of the entry.
Set to Invalid to remove the entry.

Password

The password a user must supply to use the service.

Port Map

The list of character ports that offer the service.

Connections

This field provides a button that allows you to enable or disable incoming connections to the service.

Service Queueing

This field provides a button that allows you to enable or disable the queuing of incoming connections to the service when the service is busy.

Visible Services Detail View

Service Name

The name of a visible service.

Node Name

The name of a node offering the service.

Status

The communication status of the service.

Identification

A textual description of the service.

Connections

The number of connected sessions to the service.

Rating

The relative capacity of the service to accept additional sessions.

SLIP Configuration View

This window displays the SLIP (Serial Line Interface Protocol) Configuration panel. Double-click on any entry within the panel to access the detail view for that entry. The detail view provides the information appearing in the panel in a modifiable format. Following are the field descriptions:

SLIP Configuration Detail View

SLIP Port

Identifies which port is a SLIP port.

SLIP State

This field provides a button that allows you to turn SLIP operation on the port On or Off.

Local Address

The IP address assigned to the port. You can modify this field.

Remote Address

The IP address of the remote system attached to the port. You can modify this field.

Subnet Mask

The internet subnet mask the server uses to distinguish internet addresses that can be reached directly from those that must be reached via an IP gateway. You can modify this field.



Chapter 4

Event and Alarm Messages

What is in this Chapter

This chapter describes the types of events and alarms generated by the ETSMIM and any probable cause messages corresponding to these alarms.

ETSMIM Events and Alarms

This table describes the event messages appearing in the Event Log, and any corresponding probable cause messages that may be displayed in the Enterprise Alarm Manager for the ETSMIM.

Table 4-1. Events and Alarms

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00010203 {d "%w- %d %m-, %Y - %T"} - The model created is not the same type as the device. Model type = {t}, Name = {m}, User = {u}.	CsPCause/Prob00010203 The model created is not the same type as the device.
Csevformat/Event00010306 {d "%w- %d %m-, %Y - %T"} - A (n) {t} device, named {m} has been cold started.	No probable cause message.

Table 4-1. Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Cause Message
CsEvFormat/Event00010307 {d "%w- %d %m-, %Y - %T"} - A (n) {t} device, named {m} has been warm started.	No probable cause message.
CsEvFormat/Event00010308 {d "%w- %d %m-, %Y - %T"} - A (n) {t} device, named {m} has detected a communication Link down.	CsPCause/Prob00010308 Communication link is down.
CsEvFormat/Event00010309 {d "%w- %d %m-, %Y - %T"} - A (n) {t} device, named {m} has detected a communication Link up.	No probable cause message.
CsEvFormat/Event0001030a {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected an Authentication Failure.	CsPCause/Prob0001030a Authorization failure. Other user is trying to connect to device with an invalid community string.
CsEvFormat/Event0001030b {d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected an EGP Neighbor Loss.	CsPCause/Prob0001030b Lost contact with EGP neighbor.
CsEvFormat/Event00010401 {d "%w- %d %m-, %Y - %T"} - Device {m} of type {t} is created with an IP address already used by another model.	CsPCause/Prob00010401 DUPLICATE IP ADDRESS The model has the same IP address as that of some other model.
CsEvFormat/Event00010402 {d "%w- %d %m-, %Y - %T"} - Device {m} of type {t} is created with a physical (MAC) address already used by another model.	CsPCause/Prob00010402 DUPLICATE PHYSICAL ADDRESS The model has the same Physical address (MAC address) as that of some other model.



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